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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,200

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Hermann Schomberg

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

MIDKIFF, ANASTASIA

ART UNIT

PAPER NUMBER

2882

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/507,200

Applicant(s)

SCHOMBERG, HERMANN

Examiner

Anastasia Midkiff

Art Unit

2882

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>09 September 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 4, 5, and 11 are objected to because of the following informalities:

With respect to Claim 4, Line 2 recites the control unit, "is arranged to adjust the orientation in response to any change..." wherein applicant does not specifically state what device the orientation is adjusted for. Based on the limitations in the parent Claim 2, Examiner assumes that applicant is referring to adjusting the orientation of the detector, and requests that applicant add the phrase --of the detector-- to Line 2 of Claim 4, between the phrases, "the orientation," and "in response."

Claim 11 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must refer to preceding claims in the alternative form. See MPEP § 608.01(n). Accordingly, the claim 11 has not been further treated on the merits.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 10, the first two lines of the Claim recite, "A method of forming X-ray images by means of an X-ray apparatus, notably an apparatus as claimed in claim 1," wherein it is unclear whether or not Claim 10 is dependent upon Claim 1, rendering Claim 10 indefinite. For the purposes of examination, Examiner assumes that Claim 10 is dependent upon Claim 1.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by German Patent to Graumann (DE 10008053 A1).

With respect to Claims 1 and 10, Graumann teaches an x-ray apparatus, and method for its use, which includes an X-ray source (2) for the emission of a conical X-ray beam (Column 4, Lines 10-16), and an x-ray detector (4) for the multiple detection of X-rays after their passage through an object (P) to be examined (Column 4, Lines 6-16), being arranged on an object axis (ZS, Figure 1), while the X-ray source and detector are displaced along a trajectory (Column 4, Lines 42-46), characterized in that the

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apparatus includes means (1, 3, and 9) for changing the position and/or the orientation of the X-ray detector relative to the X-ray source (Column 2 Lines 64-68, Column 3 Lines 1-4, and Column 4 Lines 33-41), and also a control unit (7, 10, and 11) for displacing the X-ray source and the x-ray detector along the trajectory (Column 2 Lines 46-56, and Column 4 Lines 48-53) and for controlling the position and/or orientation of the X-ray detector during the detection of X-rays (Column 2 Lines 29-37, and Column 4 Lines 33-41).

With respect to Claim 2, Graumann further teaches an X-ray apparatus characterized in that it includes a flat, rectangular X-ray detector (4, Figures 1 and 4, and Column 4 Lines 6-12) rotatable around the connecting line extending between the focal point of the X-ray source (2) and the center of the X-ray detector (Column 4 Lines 6-16, and Column 9 Lines 16-48), the control unit (7, 10, and 11) for controlling the orientation of the X-ray detector being constructed in such a manner that one of the edges of the X-ray detector is always situated at right angles to the object axis (ZS) while the trajectory is being completed (Column 6 Lines 3-35, and Column 8 Lines 27-42).

With respect to Claim 3, Graumann further teaches that control unit (7, 10, and 11) is arranged to adjust the orientation of the X-ray detector (4) prior to the beginning of the completion of each trajectory in such a manner that one of the edges of the x-ray detector is situated at right angles to the object axis (Column 6 Lines 3-35, and Column 8 Lines 27-42) and that the orientation of the X-ray detector is kept constant while the

trajectory is being completed (Column 4 Lines 27-31 and 67-68, and Column 5 Lines 1-23).

With respect to Claim 4, Graumann further teaches that control unit (7, 10, and 11) is arranged to adjust the orientation in response to any change of the position of the X-ray source (2) while a trajectory is being completed (Column 1 Lines 50-68, Column 2 Lines 1-4, and Column 4 Lines 33-41).

Claims 1-5 and 8-10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent Application Publication to Crain et al. (PGPUB# 2003/0091156).

With respect to Claims 1 and 10, Crain et al. teaches an x-ray apparatus, and method for its use, which includes an X-ray source (12) for the emission of a conical X-ray beam (Figure 11), and an x-ray detector (14) for the multiple detection of X-rays after their passage through an object (50) to be examined (Paragraph 20), being arranged on an object axis (Figure 10), while the X-ray source and detector are displaced along a trajectory (Paragraph 28, Lines 1-4), characterized in that the apparatus includes means (Even Numbered Items 18-48) for changing the position and/or the orientation of the X-ray detector relative to the X-ray source (Paragraphs 21-24 and Figure 4), and also a control unit (132, 134, and 136) for displacing the X-ray source and the x-ray detector along the trajectory and for controlling the position and/or orientation of the X-ray detector during the detection of X-rays (Paragraphs 26 and 38).

With respect to Claim 2, Crain et al. further teaches an X-ray apparatus characterized in that it includes a flat, rectangular X-ray detector (Figures 1-5, and

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Paragraph 19 Lines 7-12) rotatable around the connecting line extending between the focal point of the X-ray source (12) and the center of the X-ray detector (Paragraph 28, Lines 1-8), the control unit (132, 134, and 136) for controlling the orientation of the X-ray detector being constructed in such a manner that one of the edges of the X-ray detector is always situated at right angles to the object axis while the trajectory is being completed (Figure 4, Paragraph 26, and Paragraph 57 Lines 39-42).

With respect to Claim 3, Crain et al. further teaches that control unit (132, 134, and 136) is arranged to adjust the orientation of the X-ray detector (14) prior to the beginning of the completion of each trajectory in such a manner that one of the edges of the x-ray detector is situated at right angles to the object axis (Figure 4 and Paragraph 26) and that the orientation of the X-ray detector is kept constant while the trajectory is being completed (Paragraph 57, Lines 39-42).

With respect to Claim 4, Crain et al. further teaches that control unit (132, 134, and 136) is arranged to adjust the orientation in response to any change of the position of the X-ray source (12) while a trajectory is being completed (Paragraph 26, and Paragraph 38 Lines 1-5).

With respect to Claim 5, Crain et al. further teaches that the means (Even Numbered Items 18-48) for changing the position and/or orientation of the X-ray detector (14) are constructed in such a manner that the angle between the central ray of the x-ray beam and the connecting line between the focal point of the source (12) and the center of the detector can assume a value other than zero (Figure 10, Paragraph 27, and Paragraph 55), and that the control unit (132, 134, and 136) is constructed in

such a manner that at least two angular positions are adjusted during the detection of x-rays (Paragraph 26, Paragraph 38 Lines 1-5, and Paragraph 46 Lines 11-15).

With respect to Claim 8, Crain et al. further teaches the X-ray detector (14) is a flat, rectangular X-ray detector (Figures 1-5, and Paragraph 19 Lines 7-12).

With respect to Claim 9, Crain et al. further teaches that the control unit (132, 134, and 136) is arranged for the multiple displacement of the X-ray source (12) along a trajectory during the irradiation of the object to be examined and for a different angular position of the X-ray detector during each completion of the same trajectory (Paragraphs 26, 27, and 55).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crain et al., as applied to Claim 5 above, in view of Caugant et al. (USP# 4,541,293).

With respect to Claim 6, Crain et al. teach the elements of Claim 5, as disclosed above, but do not teach that the detector is arranged on one or more rails in order to change its position and/or its orientation.

Caugant et al. teach an X-ray apparatus with a source (124) and detector (125), wherein the detector is mounted on a sliding rail system (127), which allows varying



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incident angle of ray on detector utilizing more compact and inexpensive detector and source apparatuses (Column 1, Lines 23-46).

It would have, therefore, been obvious to one of ordinary skill in the art at the time of the invention to use the sliding rail assembly of Cagant et al. in the apparatus of Crain et al. to obtain desired tomographic images using a more compact and less expensive detector, as taught by Cagant et al. (Column 1, Lines 23-46).

With respect to Claim 7, Crain et al. teach the X-ray apparatus of Claim 6, as disclosed above, but does not teach that rail extends essentially perpendicularly to the central ray, notably a rail which is curved around the focal point of the x-ray source.

Cagant et al. teach an X-ray apparatus with a source (124) and detector (125), wherein the detector is mounted on a sliding rail system (127) that is curved around the focal point of the central ray and essentially perpendicular to said ray (Figure 2 and Column 5 Lines 19-23), which allows varying incident angle of ray on detector utilizing more compact and inexpensive detector and source apparatuses (Column 1, Lines 23-46).


It would have, therefore, been obvious to one of ordinary skill in the art at the time of the invention to use the sliding rail assembly of Cagant et al. in the apparatus of Crain et al. to obtain desired tomographic images using a more compact and less expensive detector, as taught by Cagant et al. (Column 1, Lines 23-46).


**Conclusion**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-5053. The examiner can normally be reached on M-F 7-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASM   
1/9/06

  
**EDWARD J. GLICK**  
SUPERVISORY PATENT EXAMINER

  
1/9/06